PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Chandrakant B. PATEL, et al.

Appln. No.: 09/078,555

Confirmation No.: 7386

Filed: May 14, 1998

Docket No: Q50373

Group Art Unit: 2617

Examiner: TRAN, CONGVAN

For: RADIO RECEIVERS FOR RECEIVING BOTH VSB AND QAM DIGITAL TELEVISION SIGNALS

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

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I. REAL PARTY IN INTEREST

The real party in interest is Samsung Electronics Co., Ltd., by virtue of an assignment recorded by the Assignment Branch of the U.S. Patent and Trademark Office on August 26, 1994, at Reel 007168, Frame 0311 in the parent U.S. Patent 6,104,442 issued August 15, 2000.

II. RELATED APPEALS AND INTERFERENCES

To the knowledge and belief of Appellants, the Assignee, and the undersigned, there are no other appeals or interferences before the Board of Appeals and Interferences that will directly affect or be affected by the Board's decision in the instant Appeal.

III. STATUS OF CLAIMS

Claims 1-41 are all the claims pending in the application.

Claims 1-23, 26, 27, 30, 34 and 37 are withdrawn from consideration. Claims 24-25, 31-33 and 38-41 are allowed. Claims 28, 29, 35 and 36 are rejected under 35 U.S.C. § 102(e) as being anticipated by Nielson (USP 5,684,827).

IV. STATUS OF AMENDMENTS

No amendments have been filed after the final rejection of January 21, 2009.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Claim 28 recites:

A method of controlling the operating mode of an equalizer comprising: (See, e.g., equalizer 36 in Fig. 2 and specification at page 14, lines 10-23)

determining the direct current (DC) level of a received signal during an interval of time; (see, e.g., Fig. 1, pilot detector 34 and page 16, lines 4-19) and

controlling the operating mode of the equalizer in response to the determined DC level, (see, e.g., page 6, lines 19-28, page 17, lines 6-9, and sentence bridging pages 17 and 18) wherein the received signal comprises multi-level symbols representing data and a field synchronizing signal, said symbols being characterized by a DC offset and wherein the determining step further comprises processing the field synchronizing signal to determine the variation of the DC offset in the received signal, wherein the field synchronizing signal comprises a pseudo random number symbol sequence and wherein the processing comprises sampling a part of the pseudo random number symbol sequence (see, e.g., page 13, lines 13-25, page 17, line 12 to page 18, line 3).

Claim 35 recites:

35. A receiver including an adaptive equalizer having different operating modes comprising:

means for determining the direct current (DC) level of a received signal during an interval of time (see, e.g., page 16, lines 4-19; Fig. 1, element 34); and

means for controlling the operating mode of said adaptive equalizer as a function of the determined DC variation, wherein said received signal includes a field sync signal and wherein said DC level determining means operates on said field sync signal (see, e.g., page 16, line 4 to page 18, line 1; Fig. 2 shows a DC level from detector 34 controlling the operating mode of equalizer 36).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The rejection of Claims 28, 29, 35 and 36 under 35 U.S.C. § 102(e) as being anticipated by Nielson (USP 5,684,827).

VII. ARGUMENT

Claims 28, 29, 35 and 36 are rejected under 35 U.S.C. § 102(e) as being anticipated by Nielson (USP 5,684,827). In the Response filed March 23, 2009, Appellant noted, "that Neilson has a filing date of October 4, 1995 and the present application claims benefit of US Application No. 08/266,753, filed June 28, 1994. Therefore, Neilson is not proper prior art to the present application. Since this is the only rejection in the application, the application should be allowed." (Page 2 of Response)

In the Advisory Action dated April 2, 2009, the Examiner states, "The subject matters claimed in claims 28, 29, 35 and 36 were added in specification on July 17, 1998 therefore the previous rejection is proper." Appellant respectfully disagrees.

Claim 28:

Turning to claim 28, this claim recites, "determining the direct current (DC) level of a received signal during an interval of time". The specification, at page 16, lines 10-12, explains that the detector 34 detects "the zero-frequency term of the real samples from the VSB synchrodyne circuitry 29." (Emphasis added.) In order for the detector 34 to detect the zero-frequency term (i.e., the DC value) from the real samples, there must inherently be a determining of the DC level of the signal during an interval of time.

Claim 28 next recites:

> controlling the operating mode of the equalizer in response to the determined DC level, wherein the received signal comprises

multi-level symbols representing data and a field synchronizing signal, said symbols being characterized by a DC offset and wherein the determining step further comprises processing the field synchronizing signal to determine the variation of the DC offset in the received signal, wherein the field synchronizing signal comprises a pseudo random number symbol sequence and wherein the processing comprises sampling a part of the pseudo random number symbol sequence.

Appellant notes that the elements of this paragraph were present in claims 26, 27 and 28, as they were presented for appeal on November 27, 2001, as a result of their being rejected under 35 U.S.C. § 112, first paragraph. The only difference between what is now in the above quoted paragraph of claim 28, and what was in claims 26, 27 and 28 of the previously appealed claims is that the current paragraph recites: "controlling the operating mode of the equalizer in response to the determined DC level", whereas the previously appealed claim recited: "controlling the operating mode of the equalizer in response to the determined [DC] variation." In a Decision by the Board of Appeals dated September 23, 2003, the Board did not sustain the 112, first paragraph, rejection. Therefore, it has already been determined by the Board that all of the elements of the quoted paragraph of claim 28 are supported by the originally filed application.

The only remaining issue is whether the original disclosure supports: "controlling the operating mode of the equalizer in response to the determined DC level". Appellant directs attention to the Appeal Brief submitted November 27, 2001, beginning at the second full paragraph on page 6 and ending at page 7, line 10, where Applicant argued support for the limitation, "controlling the operating mode of the equalizer in response to the identification of a DC offset signal." The Board found that argument to be persuasive. Appellant submits that having established support for "controlling the operating mode of the equalizer in response to the identification of a DC offset signal", support also exists for "controlling the operating mode of the equalizer in response to the determined DC level."

Claim 29:

The limitation added by claim 29 is identical to that in claim 29 previously appealed, and found supported by the Board.

Claim 35:

Claim 35 recites, "means for determining the direct current (DC) level of a received signal during an interval of time." This differs slightly from the first element of previously appealed claim 34, which recited, "means for determining the variation of the direct current (DC) level of a received signal during an interval of time." As was established above in the discussion of claim 28, determining the direct current (DC) level of a received signal during an interval of time", was disclosed in the originally filed application according to the requirements of 35 U.S.C. § 112, first paragraph.

Claim 35 next recites: "means for controlling the operating mode of said adaptive equalizer as a function of the determined DC variation." This element was recited in previously appealed claim 34, which was found by the Board to be supported by the original disclosure.

Claim 35 next recites: "wherein said received signal includes a field sync signal and wherein said DC level determining means operates on said field sync signal." This element was recited in previously appealed claim 35, except that previously appealed claim 35 recited: "wherein said received signal includes a field sync signal and wherein said DC variation determining means operates on said field sync signal." Previously appealed claim 35 was found to be supported by the original disclosure. So the only difference is between the DC level determining means of the present claim and the DC variation determining means of the previously appealed claim. Appellant submits that in an exemplary embodiment, detector 34 detects the DC level of the received signal and operates on the field sync signal, as explained, for example beginning at page 16, line 4 and extending to page 18, line 1. Therefore claim 35 is fully supported by the original disclosure.

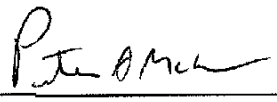
Claim 36:

The limitation added by claim 36 is identical to that in claim 36 previously appealed, and found supported by the Board.

For all the reasons set forth above, Appellant respectfully requests Board of Appeals to not sustain the rejection of claims 28-29 and 35-36.

The USPTO is directed and authorized to charge the statutory fee (37 C.F.R. §41.37(a) and 1.17(c)) and all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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Date: December 22, 2009

CLAIMS APPENDIX

CLAIMS 28, 29, 35 and 36 ON APPEAL:

1-23. (canceled).

24. A method of controlling the operating mode of an equalizer comprising steps of:

identifying a direct current (DC) component of a received signal; and

controlling the operating mode of the equalizer in response to the identification of the direct current (DC) component of said received signal, wherein the received signal at times comprises multi-level symbols representing data and a field synchronizing signal, said symbols being characterized by being accompanied by a substantially constant direct current (DC) offset component, and at other times comprises multi-level symbols representing data and being characterized by not being accompanied by said substantially constant direct current (DC) offset component, and wherein the step of controlling the operating mode of the equalizer in response to the identification of the direct current (DC) offset component of said received signal comprises substeps of:

determining whether or not said received signal is currently accompanied by said substantially constant direct current (DC) offset component;

calculating desired spectral response for said equalizer using at least a portion of said field synchronizing signal as a training signal, in response to it being determined that the direct

current (DC) level said received signal is currently accompanied by said substantially constant direct current (DC) offset component;

establishing desired spectral response for said equalizer other than from calculations using at least a portion of said field synchronizing signal as a training signal, in response to it being determined that said received signal is currently unaccompanied by said substantially constant direct current (DC) offset component.

25. The method of claim 24 wherein said step of establishing desired spectral response for said equalizer other than from calculations using at least a portion of said field synchronizing signal as a training signal consists of establishing a flat amplitude-versus-frequency characteristic in response to it being determined that said received signal is currently unaccompanied by said substantially constant direct current (DC) offset component.

26-27. (canceled).

28. A method of controlling the operating mode of an equalizer comprising:

determining the variation of the direct current (DC) level of a received signal during an interval of time; and

controlling the operating mode of the equalizer in response to the determined DC level, wherein the received signal comprises multi-level symbols representing data and a field synchronizing signal, said symbols being characterized by a DC offset and wherein the determining step further comprises processing the field synchronizing signal to determine the variation of the DC offset in the received signal, wherein the field synchronizing signal

comprises a pseudo random number symbol sequence and wherein the processing comprises sampling a part of the pseudo random number symbol sequence.

29. The method of claim 28 wherein the sampled symbol sequence is surrounded by a plurality of non-variant symbols.

30. (canceled).

31. A digital television receiver comprising:

a detector for determining the direct current (DC) level of a received digital television signal; and

an adaptive equalizer having different operating modes for responding to said received digital television signal, the operating mode of said adaptive equalizer being selected responsive to the direct current (DC) level of said received digital television signal;

the receiver further characterized by being of a type in which, responsive to the amplitude of a direct component of said received signal being more than a prescribed threshold value, said adaptive equalizer is conditioned to have its amplitude-versus-frequency characteristic determined responsive to calculations using at least a portion of said field synchronizing signal as a training signal.

32. The receiver of claim 31 further characterized by being of a type in which, responsive to the amplitude of said direct component of said received signal being less than a prescribed

threshold level, desired spectral response for said adaptive equalizer is established other than from calculations using a training signal.

33. The receiver of claim 31 further characterized by being of a type in which, responsive to the amplitude of said direct component of said received signal being less than a prescribed threshold level, said adaptive equalizer is conditioned to have a flat amplitude-versus-frequency characteristic.

34. (canceled).

35. A receiver including an adaptive equalizer having different operating modes comprising:

means for determining the direct current (DC) level of a received signal during an interval of time; and

means for controlling the operating mode of said adaptive equalizer as a function of the determined DC variation, wherein said received signal includes a field sync signal and wherein said DC level determining means operates on said field sync signal.

36. The receiver of claim 35 wherein said field sync signal comprises a pseudo random number sequence of symbols, and further including:

means for sampling a portion of said sequence of symbols for processing by said DC variation means.

37. (canceled).

38. A receiver for signals that comprise multi-level symbols representing data and a field synchronizing signal, said symbols being characterized by being accompanied by a substantially constant DC component, and for signals that comprise multi-level symbols representing data and being characterized by not being accompanied by said substantially constant DC component, said receiver comprising:

a detector for determining the DC component of a received signal;

an adaptive equalizer having different operating modes for responding to said multi-level symbols, said adaptive equalizer arranged for having its current operating mode selected responsive to the level of the direct component of said received signal as detected by said detector;

the receiver further characterized by being of a type in which, responsive to the direct component of said received signal being at least a prescribed threshold level, said adaptive equalizer is conditioned to have its amplitude-versus-frequency characteristic determined responsive to calculations using at least a portion of said field synchronizing signal as a training signal.

39. The receiver of claim 38 further characterized by being of a type in which, responsive to the direct component of said received signal being below a prescribed threshold level, desired spectral response for said adaptive equalizer is established other than from calculations using a training signal.

40. The receiver of claim 38 further characterized by being of a type in which, responsive to the direct component of said received signal being below a prescribed threshold level, said adaptive equalizer is conditioned to have a flat amplitude-versus-frequency characteristic.

41. The receiver of claim 39, further characterized by being of a type in which, responsive to the direct component of said received signal being below a prescribed threshold level, said adaptive equalizer is conditioned to have a flat amplitude-versus-frequency characteristic.

EVIDENCE APPENDIX:

NONE

RELATED PROCEEDINGS APPENDIX

There are **no** decisions rendered by a court or the Board in any proceeding identified about in Section II pursuant to 37 C.F.R. § 41.37(c)(1)(ii).